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| 10/002,012 | 12/05/2001 | Hiroshi Sekine | XA-9591 | 3034 |

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Miles & Stockbridge P.C.
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EXAMINER

BINDA, GREGORY JOHN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3679

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,012

Applicant(s)

SEKINE, HIROSHI

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Feb 23, 2004 has been entered.

Election/Restrictions

3. Claims 1-3 & 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election of Species IX (shown in Fig. 10) was made **without** traverse in Paper No. 8.

Drawings

4. The drawings are objected to because the drawings of the elected species fail to show the "interference" recited in claims 11 & 12. At best, Fig. 10B shows an "interference set to 0" (see page 20, line 10), but does not show an interference greater than zero.

5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "extreme" is a relative term which renders the claim indefinite. The term "extreme" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In the amendment filed Sep 2, 2003 applicant argued that the term "extreme" does not render the claim indefinite because specific examples of extreme-pressure additives are provided in the description at page 17. It is true that examples are given, but in no way is the list of examples presented as an exhaustive list of such additives. Therefore the indefiniteness of the term "extreme" is not imparted by what IS LISTED in the specification, but rather by what IS NOT LISTED in the specification. Unless there is a specific definition of what constitutes an "extreme-pressure additive" there is no way tell whether an additive not mentioned in the specification is or is not an "extreme pressure additive".

In the amendment filed Sep 2, 2003 applicant argued that the term "extreme" does not render the claim indefinite because one (e.g. Takabe) skilled in the art understands the meaning of the term "extreme pressure additive". However, the indefiniteness of a term is not erased

simply because one understands the meaning. Anyone, even someone not skilled in the art, could find the meaning of the term "extreme" in a common dictionary. Instead the indefiniteness of the term is due to the lack of a DEFINITIVE definition of what constitutes an extreme pressure additive. Such a definition is not provided by an open ended list of additive examples. Applicant should note also that the term "extreme" appears nowhere in the claims of Takabe. Instead it is only used by Takabe outside of the claims. The Office makes no objection to applicant using the term in the same manner.

Claim Rejections - 35 USC § 103

7. Claims 8, 11 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser, US 3,138,942. Figs. 1 & 2 show a cross joint 10 adapted to be used in a steering apparatus, the joint comprising: a yoke (see "furcation of a universal joint" in col. 2, lines 67 & 68) formed with a bearing hole (see "openings" in col. 1, line 13); a needle bearing 16, 24 positioned in the bearing hole, the needle bearing including a bearing cup 16 and rollers 24 provided therein; and a spider shaft 14, an end portion of which is fitted into the bearing hole through the needle bearing 16, 24. Figs. 1 & 2 show the rollers 24 are interference-fitted on an end periphery 27 of the end portion of the spider shaft 14, but Kayser does not expressly disclose an interference in a range from 0.0002 mm to 0.025 mm. In col. 3, lines 62-65, the rollers 24 are disclosed as axially movable, but Kayser does not expressly disclose that the amount of movement be equal to 0.6 mm or larger. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the amount interference in a range from 0.0002 mm to 0.025 mm and the amount of movement be equal to 0.6 mm or larger,

since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser as applied to claim 8 above, and further in view of Takabe, US 2001/0007832. In col. 2, lines 3-7, Kayser discloses that a lubricating agent fills the interior of the needle bearing 22, 24, but Kayser does not expressly disclose that an extreme-pressure additive is added to the lubricating agent. In paragraphs 0011-0013, Takabe discloses adding an extreme-pressure additive to a lubricating agent in order to provide a lubricating agent that will exhibit durability under severe conditions, will keep suitable hardness with little change in consistency at high temperature, and exhibit better water resistance compared with other lubricants. It would have been obvious to one of ordinary skill in the art to modify the cross joint of Kayser by adding an extreme-pressure additive to the lubricant in order to provide a lubricating agent that will exhibit durability under severe conditions, will keep suitable hardness with little change in consistency at high temperature, and exhibit better water resistance compared with other lubricants.

9. Claims 8 & 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mangiavacchi, US 4,710,150. Mangiavacchi discloses a cross joint adapted to be used in a steering apparatus, the joint comprising a yoke (see "a universal joint" in col. 2, lines 17) formed with a bearing hole. The figure shows the joint comprises: a needle bearing 3, 4 to be positioned in the bearing hole, the needle bearing including a bearing cup 3 and rollers 4 provided therein;

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and a spider shaft 1, an end portion of which is fitted into the bearing hole through the needle bearing 3, 4. The figure shows the end portion of the spider shaft is formed with a hole (see also "cavity" in col. 2, line 29) that is "bottomed" by element 5. The figure shows the rollers 4 are interference-fitted on an end periphery of the end portion of the spider shaft 1 but Mangiavacchi does not expressly disclose an interference in a range from 0.0002 mm to 0.025 mm. The figure shows a gap or space below the rollers 4, which indicates the rollers 4 are arranged to be movable in an axial direction, but Mangiavacchi does not expressly disclose that the amount of movement be equal to 0.6 mm or larger. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the amount interference in a range from 0.0002 mm to 0.025 mm and the amount of movement be equal to 0.6 mm or larger, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mangiavacchi as applied to claim 8 above, and further in view of Takabe. In col. 2, lines 27 & 28, Mangiavacchi discloses that a lubricating agent fills the interior of the needle bearing 3, 4, but Mangiavacchi does not expressly disclose that an extreme-pressure additive is added to the lubricating agent. However, it would have been obvious to one of ordinary skill in the art to modify the cross joint of Mangiavacchi in view of Takabe by adding an extreme-pressure additive to the lubricant for the same reason noted in item 8 above.

Response to Arguments

11. Applicant's arguments filed Feb 23, 2004 have been fully considered but they are not persuasive. Applicant argues that Kayser and Mangiavacchi fail to disclose an interference fit between the rollers and spider shaft. However, Kayser's Figs. 1 & 2 and Mangiavacchi's figure each show an interference fit between the rollers and the spider shaft to the same extent that applicant shows such a fit in instant Fig. 10.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (703) 308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda
Primary Examiner
Art Unit 3679